



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/716,885	11/20/2000	Rumo Satake	SEL 229	1074

7590

08/01/2002

COOK, ALEX, McFARRON, MANZO  
CUMMINGS & MEHLER, LTD.  
SUITE 2850  
200 WEST ADAMS STREET  
CHICAGO, IL 60606

EXAMINER

LEWIS, DAVID LEE

ART UNIT

PAPER NUMBER

2673

DATE MAILED: 08/01/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.  
09/716,885

Applicant(s)  
Satake et al.

Examiner  
David L Lewis

Art Unit  
2673



— The MAILING DATE of this communication appears on the cover sheet with the correspondence address —

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on Nov 20, 2000
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 35 C.D. 11; 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-34 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirements.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some\* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 2 & 3 6) ☐ Other:

**Title: Method of Driving Liquid crystal display device**

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371© of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. **Claims 1-6, 10, 17-19, 23, 26-28, and 32 are rejected under 35 U.S.C. 102(e) as being anticipated by Yang et al. (6392624).**
3. **As in claim 1, Yang et al. teaches of a method of driving a liquid crystal display device, said liquid crystal display device including: an orientation film over a substrate, **figure 3 item 3a,b**; and a liquid crystal material over orientation film, **figure 3 item 5**, said liquid crystal material having a chiral smectic phase, **column 16 lines 13-15**, and being continuously switched according to an electric field applied thereto, **figure 1A,B,C**, said method comprising the steps of: displaying a black level by the**

**Title: Method of Driving Liquid crystal display device**

liquid crystal material in a first period, **figure 1C item V3**; applying a voltage to the liquid crystal material for a gradation display in a second period, **figure 1C item V4, column 9 lines 47-67**.

4. **As in claim 2, Yang et al. teaches** of a method of driving a liquid crystal display device, said liquid crystal display device including: an orientation film over a substrate, **figure 3 item 3a,b**; and a liquid crystal material over the orientation film, **figure 3 item 5**, said liquid crystal material having a chiral smectic phase, **column 16 lines 13-15**, and being continuously switched according to an electric field applied thereto, **figure 1A,B,C**, said method comprising the steps of: canceling out a spontaneous polarization of the liquid crystal material in a first period, **figure 1C item V3**; and applying a voltage to the liquid crystal material for a gradation display in a second period, wherein the second period comes before or after the first period, **figure 1C item V4, column 9 lines 47-67**.
5. **As in claim 3, Yang et al. teaches** of a method of driving a liquid crystal display device: said liquid crystal display device including: an orientation film over a substrate, **figure 3 item 3a,b**; and a liquid crystal material over the orientation film, **figure 3 item 5**, said liquid crystal material having a chiral smectic phase, **column 16 lines 13-15**, and being continuously switched according to an electric field applied thereto, **figure 1A,B,C**, said method comprising the steps of: applying a voltage of OV to the liquid crystal material, **figure 1C item V3**; and applying a voltage to the liquid crystal material

**Title: Method of Driving Liquid crystal display device**

for a gradation display in a second period, wherein the second period comes before or after the first period, **figure 1C item V4, column 9 lines 47-67.**

6. **As in claims 4, 17, and 26, Yang et al. teaches** of, wherein a plurality of active elements are formed over the substrate, column 1 lines 5-27. **As in claims 5, 18, and 27, Yang et al. teaches** of, wherein each of the plurality of active elements applies a voltage to the liquid crystal material, and wherein the voltage has an upper limit, column 3 lines 55-67. **As in claims 6, 19, and 28, Yang et al. teaches** of, wherein the upper limit of the voltage has an absolute value of 7 V or less, column 4 lines 1-20, wherein 7V or less fails within said range. **As in claims 10, 23, and 32, Yang et al. teaches** of, wherein a first response time is defined as a response time of the liquid crystal material between a first voltage and a second voltage having an opposite polarity to the first voltage not via a voltage of OV, figure 1C items V1 and V2, wherein a second response time is defined as a response time of the liquid crystal material between a first voltage and a second voltage having an opposite polarity to the first voltage via the voltage of OV', wherein the second response time is five times or more as short as the first response time, figure 1C items V1-V3 and V4.
7. **Claims 12-15 are rejected under 35 U.S.C. 102(e) as being anticipated by Saishu et al. (6069600).**

**Title: Method of Driving Liquid crystal display device**

8. **As in claim 12, Saishu et al. teaches** of a method of driving a liquid crystal display device, column 3 lines 21-65, said liquid crystal display device including: a plurality of thin film transistors being provided over a substrate, **column 1 lines 5-25**; an auxiliary capacitor being connected in series to each of the plurality of thin film transistors, **figure 9A item 16n,m**; an orientation film over each of the plurality of thin film transistors, **figure 2F item 20e**; and a liquid crystal material over the orientation film, said liquid crystal material having a spontaneous polarization and being continuously switched according to an electric field applied thereto, **column 15 lines 40-45**, said method comprising the steps of: applying a voltage of OV to the liquid crystal material in a first period, **figure 3 item Vpix(n-1,m)**; and performing a gradation display in a second period, wherein the second period comes before or after the first period, **figure 3 item Vpix(n-1,m)**.
  
9. **As in claim 13, Saishu et al. teaches** of , wherein a transmittance of the liquid crystal material is uniquely determined when voltages having a same absolute value and opposite polarities are applied thereto, figure 6. **As in claim 14, Saishu et al. teaches** of , wherein the liquid crystal material has a same tilt angle when voltages having a same absolute value and opposite polarities are applied thereto, figure 6 and 7. **As in claim 15, Saishu et al. teaches** of , wherein the liquid crystal material has a chiral smectic CF phase, column 3 lines 50-65.

**Title: Method of Driving Liquid crystal display device**

***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:
- (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
11. **Claims 7-9, 11, 16, 20-22, 24, 25, 29-31, 33, and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yang et al. (6392624) in view of Saishu et al. (6069600).**
12. **As in claims 7-9, 16, 20-22, 25, 29-31, and 34**, Yang et al. teaches of the invention as applied to claim 1, however Yang et al. is silent as to said combination of varying spontaneous polarization of the liquid crystal material being of a specific value and orientation film thickness. **Saishu et al.** addresses varying spontaneous polarization of the liquid crystal material, **column 9 lines 15-25, column 12 lines 55-60**, further wherein said varying orientation film thickness would have been an obvious design choice in view of the range of values suggested by Saishu, further wherein said thickness values also represent obvious design choice thickness values available to the skilled artisan. **As in claims 11, 24, and 33**, Saishu et al. teaches of the auxiliary capacitor will known in the art that Yang et al. is silent on. **Therefore it would have been obvious** to the skilled artisan at the time of

**Title: Method of Driving Liquid crystal display device**

the invention to adapt said varying polarization and thickness values as suggested by Saishu in the device as suggested by Yang because both Yang and Saishu teaches of a drive technique for a passive and active matrix type liquid crystal display, as found in the above claims.

***Conclusion***

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. 5657038, 6417828, 6219019, 5400048, 6239779, 6163360.
14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **David L. Lewis** whose telephone number is **(703) 306-3026**. The examiner can normally be reached on MT and THF from 8 to 5. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala, can be reached on (703) 305-4938. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-3900.

**Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks  
Washington, D.C. 20231

**or faxed to:**



Serial Number: 09/716,885

Art Unit: 2673

Applicant: Satake

Page 8

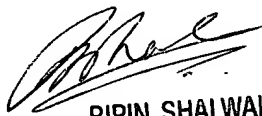
**Title: Method of Driving Liquid crystal display device**

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

---

  
BIPIN SHALWALA  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600

Examiner: David L. Lewis

July 29, 2002